

AMENDMENT TO CLAIMS 1-16

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS

1. (thrice amended) A saccadic-motion detection device comprised of an optical system for focusing light reflected and/or emitted from a subject's eye directly onto an optical navigation chip said optical navigation chip, comprised of a solid state semiconductor whereby the solid state semiconductor contains a photo sensitive imaging array which is capable of in a first instance configured for recording the focusing light reflected and/or emitted from a subject's eye and for capable of measuring saccadic eye movement.
2. (twice amended) The optical navigation chip in claim 1 directly converts the incident light into digital representations of the movement or position of the eye, or both;
3. (twice amended) The saccadic-motion detection device detector of claim 1 can be is configured to determine the rate of movement of the eye;
4. (twice amended) The saccadic-motion detection device detector of claim 1 can be is configured to determine the angular position, speed, and/or acceleration of the eye;
5. (twice amended) The saccadic-motion detection device detector of claim 4 can be is configured to compare the value of position, speed, and/or acceleration with a table associating known or standard conditions to those values determined from the subject's eye;
6. (twice amended) The saccadic-motion detection device detector of claim 4, wherein the condition a condition of the eye can be reported among known conditions for normal or impaired conditions, due to at least one of intoxication, fatigue, dementia, delirium, psychosis, attention deficit, hyperactivity, depression, or mania;
7. (twice amended) The saccadic-motion detection device detector of claim 6, wherein the condition of intoxication can be determined that is caused by drugs, such as benzodiazepines, ethanol (alcohol), barbiturates, narcotics, narcotic mixtures, and amphetamines;
8. (twice amended) The saccadic-motion detection device detector of claim 1 wherein the optical navigation chip is configured with the capability to provide position or motion information at greater than 1200 times per second;
9. (twice amended) The saccadic-motion detection device detector of claim 1, wherein the optical navigation chip is configured with the capability to provide position or motion information at between about 1200 and about 6000 times per second;

10. (thrice amended) The saccadic-motion detection device ~~detector~~ of claim 1, wherein a handheld mechanical frame is attached to the optical system apparatus and the optical navigation chip ~~so as to be grasped by hand~~;
11. (thrice amended) The saccadic-motion detection device ~~detector~~ of claim 1, wherein a source of light, said source of light being outside the visible spectrum for humans, is ~~attached and configured to the subject's eye so configured to be attached near the subject's eye so that the~~ reflected light is received by the optical system apparatus;
12. Cancelled
13. (twice amended) The saccadic-motion detection device ~~detector~~ of claim 1, wherein the optical navigation chip contains an array of charge coupled devices (CCDs);
14. (thrice amended) The saccadic-motion detection device ~~detector~~ of claim 1, wherein ~~the subjects are a subject is a~~ creatures capable of saccadic eye motion, which includes humans and other animals;
15. (thrice amended) A system for detecting saccadic eye movements comprised of a motion transducer ~~using and~~ an optical apparatus configured to focus light received from a subject's eye directly onto the motion transducer, which then provides at least one direct indication of saccadic eye motion over a discrete interval of time at a discrete point in time and/or motion at different times;
16. (previously amended) The system of claim 15 that includes further comprising a light source to illuminate the subject's eye, and a housing for the light source, a motion transducer, and an optical apparatus, and a handheld housing, ~~which can include a hand grip, so that the entire device is readily portable; housing for supporting all components of the system for ready portability~~.